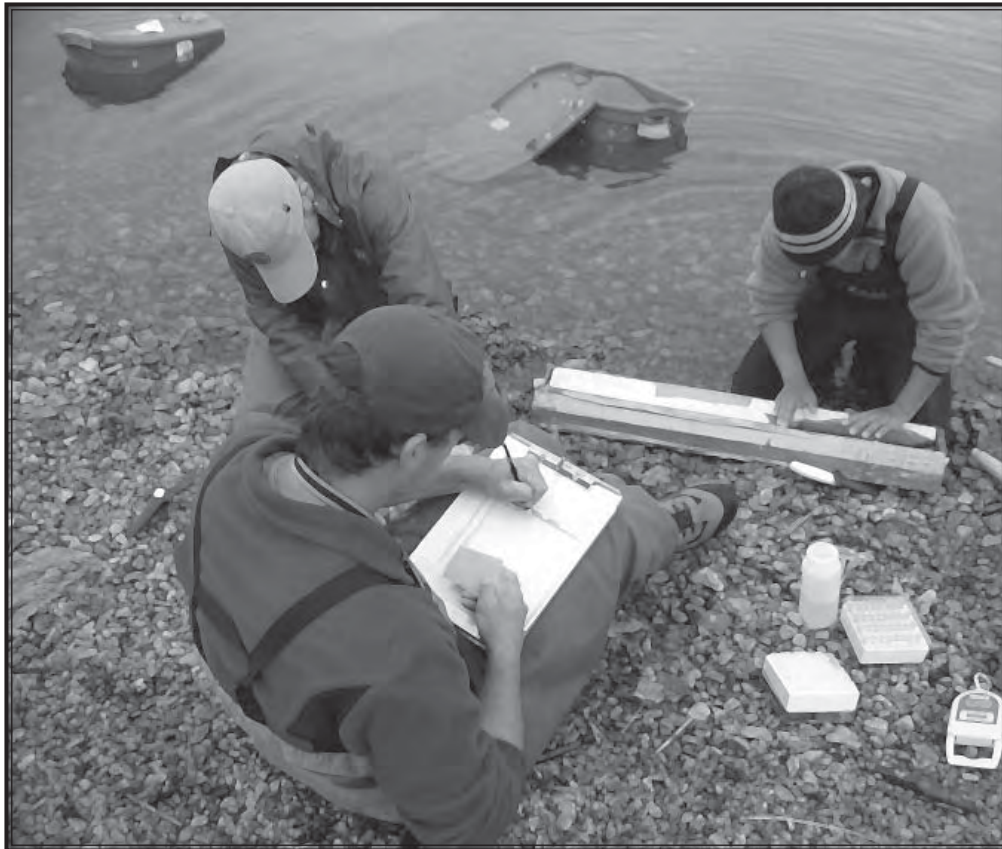


**DRAFT**  
**2007**  
**FISHERIES RESOURCE MONITORING PLAN**



## INTRODUCTION

### BACKGROUND

Since 1999, under the authority of Title VIII of ANILCA, the Federal government has assumed management responsibility for subsistence fisheries on Federal public lands in Alaska. Expanded subsistence fisheries management has imposed substantial new informational needs for the Federal system. Section 812 of ANILCA directs the Departments of Interior and Agriculture, cooperating with the State of Alaska and other Federal agencies, to research fish and wildlife and subsistence uses on Federal public lands. To increase the quantity and quality of information available for management of subsistence fisheries, the Fisheries Resource Monitoring Program (Monitoring Program) was created within the Office of Subsistence Management. The Monitoring Program was envisioned as a collaborative inter-agency, inter-disciplinary approach to enhance existing fisheries research, and effectively communicate information needed for subsistence fisheries management on Federal public lands.

Original guidance for the Monitoring Program was provided by the Federal Subsistence Board and outlined in the *Operational Strategy for Information Management*<sup>1</sup>. The Regional Advisory Councils (Councils) have identified important issues and information needs for their regions, with review and update on an annual basis. To ensure that the Monitoring Program addresses the highest priority information needs for Federal subsistence fisheries management, the Office of Subsistence Management began a strategic planning process in 2004 to build on the work done by the Councils. Facilitated workshops for the Southwest, Southcentral, and Southeast regions have been held over the last three years with representatives of Federal and State agencies, academia, Alaska Native and rural organizations, and Councils. Participants at each workshop identified fisheries units for their region; developed goals, objectives, and information needs for each fishery unit; and then prioritized fishery units, goals, objectives and information needs. Final workshop reports for the Southcentral region and Bristol Bay-Chignik area have been completed, and results were used to guide the 2007 Request for Proposals. The Kodiak-Aleutians report should be completed by November 2006, the first workshop for the Northern Alaska Region is tentatively scheduled for spring 2007, and plans for the remaining regions should be completed within three years.

*The mission of the Monitoring Program is to identify and provide information needed to sustain subsistence fisheries on Federal public lands, for rural Alaskans, through a multidisciplinary, collaborative program.*

To implement the Monitoring Program, a collaborative approach is utilized where five Federal agencies (Fish and Wildlife Service, Bureau of Land Management, National Park Service, Bureau of Indian Affairs, and USDA Forest Service) work with the Alaska Department of Fish and Game, Regional Advisory Councils, Alaska Native organizations, and other organizations. An inter-agency Technical Review Committee provides scientific evaluation of proposals and investigation plans. Public review and recommendations for funding are provided through the Councils. An inter-agency Staff Committee reviews all recommendations, and reconciles differences between staff and public recommendations. The Federal Subsistence Board (Board) approves annual monitoring plans with the benefit of both a technical recommendation by the Technical Review Committee and public review by the Regional Advisory Councils.

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<sup>1</sup> Krueger, C., Brelsford, T., Casipit, C., Harper, K., Hildebrand, I., Rost, P., Thompson, K., and Jones, L. 1999. *Federal Subsistence Fisheries Management: Operational Strategy for Information Management. Report to the Federal Subsistence Staff Committee by the Sub-Committee for the Development of a Blueprint for Interagency Functions, Roles, and Responsibilities.* 122 p.

The purpose of this section is to present the Technical Review Committee's funding recommendations for the 2007 Monitoring Plan.

## PROJECT EVALUATION PROCESS

The Technical Review Committee evaluates proposals, and subsequently full investigation plans, and makes recommendations for funding. The committee is chaired by the Chief of the Office of Subsistence Management Fisheries Information Services Division, and is composed of representatives from each of the five Federal agencies and three representatives from the Alaska Department of Fish and Game. An additional anthropologist from the Minerals Management Service provides additional social science expertise on the Technical Review Committee and provides a balance of disciplines. Staff from Fisheries Information Services provides support for the committee.

Four factors are used to evaluate studies:

### 1. Strategic Priority

Proposed projects should address the following and must meet the first criteria to be eligible for Federal subsistence funding.

*Federal Jurisdiction*—Issue or information needs addressed in projects must have a direct association to a subsistence fishery within a Federal conservation unit as defined in legislation, regulation and plans.

*Conservation Mandate*—Risk to the conservation of species and populations that support subsistence fisheries, and risk to conservation unit purposes as defined in legislation, regulation and plans.

*Allocation Priority*—Risk of failure to provide a priority to subsistence uses, and risk that subsistence harvest needs will not be met.

*Data Gaps*—Amount of information available to support subsistence management (higher priority given where a lack of information exists).

*Role of Resource*—Contribution of a species to a subsistence harvest (e.g., number of villages affected, pounds of fish harvested, miles of river) and qualitative significance (e.g., cultural value, unique seasonal role).

*Local Concern*—Level of user concerns over subsistence harvests (e.g., upstream vs. downstream allocation, effects of recreational use, changes in fish abundance and population characteristics).

### 2. Technical-Scientific Merit

The project must meet accepted standards for design, information collection, compilation, analysis, and reporting. Projects should have clear study objectives, an appropriate sampling design, correct statistical analysis, a realistic schedule and budget, and appropriate products, including written reports. Projects must not duplicate work already being done.

### 3. Investigator Ability and Resources

Investigators must have the ability and resources to successfully complete the proposed study. This will be evaluated using the following information for each investigator:

Ability

- Education and training
- Related work experience
- Publications, reports, and presentations
- Past or ongoing work on Monitoring Program studies

Resources

- Office and laboratory facilities
- Technical and logistic support
- Personnel and budget administration

**4. Partnership-Capacity Building**

Partnerships and capacity building are priorities of the Monitoring Program. ANILCA mandates that the Federal government provide rural residents a meaningful role in the management of subsistence fisheries, and the Monitoring Program offers tremendous opportunities for partnerships and participation of local residents in monitoring and research. Investigators are requested to include a strategy for integrating local capacity development in their investigation plans. Investigators must complete appropriate consultations with local villages and communities in the area where the project is to be conducted. Letters of support from local organizations add to the strength of a proposal. Investigators and their organizations should demonstrate their ability to maintain effective local relationships and commitment to capacity building.

**POLICY AND FUNDING GUIDELINES**

Several policies have been developed to aid in implementing funding.

- Studies must be non-duplicative with existing projects.
- Most Monitoring Program funding is dedicated to non-Federal sources.
- Activities not eligible for funding under the Monitoring Program include: a) habitat protection, restoration, and enhancement; b) hatchery propagation, restoration, enhancement, and supplementation; c) contaminant assessment, evaluation, and monitoring; and d) projects where the primary objective is capacity building (e.g., science camps, technician training, intern programs). These activities would most appropriately be addressed by the land management agencies.
- Proposals may be funded for up to three years duration.

**Finances and Guideline Model for Funding**

The Monitoring Program was first implemented in 2000, with an initial investment of \$5 million. Since 2001, a total of \$6.25 million is annually allocated for the Monitoring Program. The Department of Interior, through the U.S. Fish and Wildlife Service, annually provides \$4.25 million. The Department of Agriculture, through the U.S. Forest Service, annually provides \$2 million. On an annual basis, this budget funds both continuations of existing studies (year-2 or 3 of multi-year projects), and new study starts. Budget guidelines are established by geographic region and data type, and for 2007, \$3.97 million is available for new starts. Proposals are solicited according to the following two data types.

**1. Stock Status and Trends Studies (SST).**

These projects address abundance, composition, timing, behavior, or status of fish populations that sustain subsistence fisheries with nexus to Federal public lands. The budget guideline for this category is two-thirds of available funding.

**2. Harvest Monitoring and Traditional Ecological Knowledge (HM-TEK).**

These projects address assessment of subsistence fisheries including quantification of harvest and effort, and description and assessment of fishing and use patterns. The budget guideline for this category is one-third of available funding.

**2007 FISHERIES RESOURCE MONITORING PLAN**

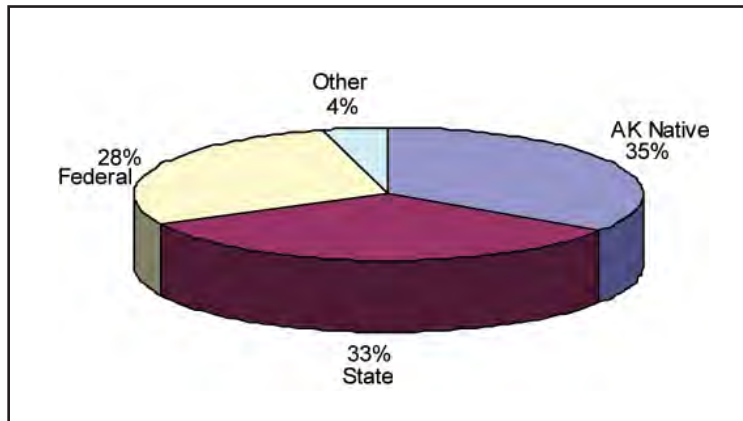
For 2007, a total of 37 investigation plans are under consideration for funding (Table 1). Of these, 30 are SST projects and 7 are HM-TEK projects. The Technical Review Committee recommends funding 35 of these investigation plans.

Total funding available for new projects in 2007 is \$3.97 million while the proposed cost of funding all 37 projects submitted would be \$4.04 million. The 35 projects recommended for funding by the Technical Review Committee would have a total cost of \$3.80 million. In making their recommendations, the committee also weighed the importance of funding new projects in 2007 with the knowledge that only about \$2.2 million will be available for new projects in 2008. As has been done in past years, any unallocated Monitoring Program funds from the current year will be used to increase the amount of funding available for the subsequent year.

As recommended by the Technical Review Committee, the 2007 Monitoring Plan would provide 35% of the funding to Alaska Native organizations, 28% to Federal agencies, and 33% to State agencies (Figure 1).

**Table 1.** Number of investigation plans received for funding consideration in 2007, and number recommended for funding by the Technical Review Committee. Data types are stock status and trends (SST), and harvest monitoring and traditional ecological knowledge (HM-TEK).

<b>Geographic Region</b>	<b>Investigation Plans</b>			<b>Technical Review Committee</b>		
	<b>SST</b>	<b>HM-TEK</b>	<b>Total</b>	<b>SST</b>	<b>HM-TEK</b>	<b>Total</b>
Northern Alaska	3	1	4	3	1	4
Yukon	5	3	8	5	2	7
Kuskokwim	6	0	6	6	0	6
Southwest Alaska	5	2	7	5	1	6
Southcentral Alaska	4	0	4	4	0	4
Southeast Alaska	7	1	8	7	1	8
<b>Total</b>	<b>30</b>	<b>7</b>	<b>37</b>	<b>30</b>	<b>5</b>	<b>35</b>



**Figure 1.** Distribution of 2007 funding to Alaska Native, Federal, State, and other organizations.

## **HOW TO PROVIDE YOUR COMMENTS**

We invite your review and comments on the draft Fisheries Resource Monitoring Plan for 2007. Regional Advisory Councils will have an opportunity to review the draft Monitoring Plan during Council meetings in the fall of 2006.

Your comments are welcome by October 20, 2006. These will be compiled along with Council comments and will be presented to the Federal Subsistence Board when it meets in January 2007. Written comments may be submitted to:

Office of Subsistence Management  
Attn: Kathy Orzechowski  
3601 C Street, Suite 1030  
Anchorage, AK 99503  
Phone: 1-800-478-1456 Fax: 907-786-3612  
E-mail: [fisheries\\_resource\\_monitoring@fws.gov](mailto:fisheries_resource_monitoring@fws.gov)



## **SOUTHWEST REGION OVERVIEW**

### **ISSUES AND INFORMATION NEEDS**

The two Southwest Regional Advisory Councils, the Bristol Bay and Kodiak-Aleutians Councils, have identified important issues and information needs for their regions, with review and update on an annual basis. The Office of Subsistence Management also began a strategic planning process in 2004, which was completed for the Bristol Bay and Chignik areas in 2005 and will be completed for the Kodiak, Alaska Peninsula, and the Aleutian Islands areas by November 2006. Based on the Bristol Bay-Chignik Strategic Plan, the 2007 Request for Proposals identified three high priority subsistence fishery units, including Bristol Bay Salmon, Chignik Salmon, and Bristol Bay-Chignik Non-Salmon. The 2007 priority information needs for the Kodiak-Aleutians are based on the information needs lists developed through the Council. Information topics include salmon stock assessment and monitoring, subsistence uses and practices, and concerns for small stocks in mixed stock salmon fisheries.

### **PROJECTS CURRENTLY FUNDED UNDER THE FISHERIES RESOURCE MONITORING PROGRAM**

Since the inception of the Monitoring Program in 2000, 34 projects have been funded in the Southwest Region, and three will still be operating during 2007 (Table 1). One of these ongoing projects addresses Lake Clark sockeye salmon, one addresses Perryville-Chignik coho and sockeye salmon, and one addresses Lake Clark whitefish.

### **PROJECTS FORWARDED FOR INVESTIGATION PLAN DEVELOPMENT**

Eighteen proposals for research in the Southwest region were submitted to the Office of Subsistence Management. The Technical Review Committee reviewed these proposals and recommended ten (six SST and four HM-TEK) for development of investigation plans. However, four proposals were withdrawn by the investigators. For the other five SST and two HM-TEK projects, investigators generally responded to the Technical Review Committee proposal review comments in developing their investigation plans. Detailed budgets submitted with each investigation plan allowed identification of funds requested by Alaska Native, State, Federal, and other organizations; funds that would be used to hire local residents; and matching funds from investigating agencies and organizations (Tables 2 and 3).

### **AVAILABLE FUNDS**

Federal Subsistence Board guidelines direct the initial distribution of funds among regions and data types. For 2007, \$403,000 is available for funding new projects in the Southwest Region, which is comprised of the Kodiak, Alaska Peninsula, Aleutian Islands, Chignik, and Bristol Bay management areas. Two thirds of this (\$269,000) is available to fund SST projects, and one-third (\$134,000) is available to fund HM-TEK projects.

**Table 1.** Summary of projects funded under the Subsistence Fisheries Resource Monitoring Program in the Southwest Region, 2000–2007. Abbreviations used for investigators are: ADFG=Alaska Department of Fish and Game, APIA= Aleutian-Pribilof Islands Association, BBNA=Bristol Bay Native Association, ISU=Idaho State University, KANA=Kodiak Area Native Association, NTC= Nondalton Tribal Council, NPS=National Park Service, USFWS=U.S. Fish and Wildlife Service, USGS=U.S. Geological Survey, UW=University of Washington.

Project Title	Investigators	Budget (\$000s)							
		2000	2001	2002	2003	2004	2005	2006	2007
Bristol Bay Salmon									
Togiak River Salmon Weir	USFWS	\$16.0	\$50.0	\$50.0					
Sockeye Salmon Escapement Estimation in the Alagnak River Drainage	ADFG, NPS, BBNA	\$43.7	\$115.5	\$108.5					
Angler Effort Index for the Alagnak River	ADFG	\$40.2							
Lake Clark Sockeye Salmon Assessment	USGS	\$78.0	\$129.0						
Togiak River Subsistence Harvest Monitoring	BBNA, ADFG, USFWS		\$55.5	\$46.6	\$30.3				
Collection of Traditional Ecological Knowledge on Sockeye Salmon Harvest Patterns in Nondalton, Alaska	NPS, NTC		\$22.2						
Escapement Estimates and Population Monitoring Lake Clark Sockeye Salmon	USGS, UW		\$116.9	\$112.3	\$88.4				
Traditions, Knowledge and Customs of Alaska Peninsula/Becharof NWR Complex and Naknek River Subsistence Fisheries	ADFG, BBNA		\$40.1	\$63.5					
Harvest assessment of the recreational fishery for salmon in the Alagnak River	ADFG		\$133.3						
Estimation of coho salmon escapement in the Ugashik lakes system, Alaska Peninsula Refuge	USFWS, ADFG, BBNA		\$87.7	\$94.2	\$85.6				
Fisheries Biotechnician Training Program	NPS				\$22.0				
Lake Clark Sockeye Salmon Run Timing	ADFG					\$136.9	\$20.9	\$76.8	
Sharing, Bartering, and Trading in Subsistence Resources in Bristol Bay	ADFG, BBNA					\$74.3	\$99.7	\$27.6	
Lake Clark Sockeye Salmon Escapement	NPS, USGS						\$43.3	\$43.8	\$44.2
Subtotal		\$177.9	\$750.2	\$475.1	\$226.3	\$211.2	\$163.9	\$148.2	\$44.2
Chignik Salmon									
Estimate Coho Salmon Escapement and Carrying Capacity in the Kametlook River	USFWS, BBNA			\$20.1	\$26.4	\$14.6			
Estimation of Late Run Sockeye and Coho Salmon Escapement in the Clark River, a Tributary to Chignik River	USFWS, BBNA			\$37.9	\$13.9	\$1.4			
Estimation of Coho Salmon Escapement in Streams Adjacent to Perryville, Alaska Peninsula National Wildlife Refuge	USFWS					\$11.4	\$11.4		
Perryville-Chignik Coho Salmon and Late-run Sockeye Salmon Aerial Surveys	USFWS						\$14.7	\$29.4	\$29.4
Subtotal		\$0.0	\$0.0	\$58.0	\$40.3	\$27.4	\$26.1	\$29.4	\$29.4
Bristol Bay-Chignik Freshwater Species									
Genetic Baseline Development for Dolly varden in Togiak River	USFWS	\$26.8	\$7.8						
Traditional Knowledge of Fish in the Bristol Bay Area	ADFG	\$39.6							
Subsistence Fisheries Assessment: Kvichak River Watershed Resident Species	ADFG, BBNA	\$30.9		\$31.0	\$29.1				
Ungalikthik and Negukthik Rivers Rainbow Trout Assessment	USFWS					\$38.9			
Tazimina Rainbow Trout Assessment	ADFG					\$111.0			
Lake Clark Whitefish Assessment	ADFG, BBNA						\$71.0	\$101.0	\$62.1
Subtotal		\$97.3	\$7.8	\$31.0	\$29.1	\$149.9	\$71.0	\$101.0	\$62.1
Total Bristol Bay-Chignik Monitoring Program									
		\$275.2	\$758.0	\$564.1	\$295.7	\$388.5	\$261.0	\$278.6	\$135.7

Continued on next page



Table 1. Continued.

Project Title	Investigators	Budget (\$000s)							
		2000	2001	2002	2003	2004	2005	2006	2007
Kodiak-Aleutians									
Stock Assessment of Sockeye Salmon from the Buskin River, Kodiak	ADFG	\$18.5	\$49.5	\$80.0	\$57.6				
Estimation of Sockeye Salmon Escapement into McLees Lake, Unalaska Island	USFWS		\$88.6	\$77.4	\$80.5				
Estimation of Sockeye and Coho Salmon Escapement in Mortenson Creek, Izembek National Wildlife Refuge	USFWS		\$121.3	\$85.9	\$83.6				
Subsistence Fisheries Harvest Assessment and Traditional Ecological Knowledge, Lower Alaska Peninsula and Aleutians	ADFG, APIA, ISU			\$91.8	\$46.0				
Afognak Lake Sockeye Salmon - Smolt Enumeration Feasibility	ADFG				\$38.2				
Estimation of Sockeye and Coho Salmon Escapement in Mortenson Creek, Izembek National Wildlife Refuge	USFWS					\$94.7	\$92.8	\$92.8	
Estimation of Sockeye Salmon Escapement into McLees Lake, Unalaska Island	USFWS					\$79.0	\$76.5	\$79.0	
Stock Assessment of Afognak Lake Sockeye Salmon	ADFG					\$83.8	\$68.4	\$68.7	
Stock Assessment of Sockeye Salmon from the Buskin River, Kodiak	ADFG					\$64.2	\$65.2	\$67.0	
Subsistence fisheries harvest assessment and traditional knowledge, Kodiak	ADFG, KANA					\$60.9	\$82.2	\$19.2	
Total Kodiak-Aleutians Monitoring Program									
		\$18.5	\$259.4	\$335.1	\$305.9	\$382.6	\$385.1	\$326.7	\$0.0
Total Southwest Region Monitoring Program									
		\$293.7	\$1,017.4	\$899.2	\$601.6	\$771.1	\$646.1	\$605.3	\$135.7

**Table 2.** Southwest Region project costs, by organization (Alaska Native, State, Federal, other), for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2007.

Project Number	Title	Project Costs (\$000s)			
		AK Native	State	Federal	Other
Stock Status and Trends Projects					
07-401	Afognak Lake Sockeye Salmon Smolt & Lake Assessment		\$76.7		
07-402	Buskin River Sockeye Salmon Weir		\$99.2		
07-404	Perryville-Clark River Coho-Sockeye Aerial Counts				
07-405	McLees Lake Sockeye Salmon Weir	\$12.4	\$1.1	\$66.4	
07-408	Togiak River Rainbow Smelt Assessment	\$12.7	\$65.4		
Harvest Monitoring and Traditional Ecological Knowledge Projects					
07-452	Kvichak Watershed Subsistence Fishing Ethnography	\$20.0	\$118.4	\$7.7	
07-455	Adak Island Subsistence Fishing	\$10.1			\$80.2

**Table 3.** Southwest Region local hire and matching funds for investigation plans submitted to the Fisheries Resource Monitoring Program for funding consideration in 2007. Abbreviations used for investigators are: ADFG=Alaska Department of Fish and Game, EDAW=Private Consulting Firm, USFWS=U.S. Fish and Wildlife Service.

Project Number	Lead	Title	Funding (\$000s)	
			Local Hire	Matching
Stock Status and Trends Projects				
07-401	ADFG	Afognak Lake Sockeye Salmon Smolt & Lake Assessment	\$33.3	\$48.7
07-402	ADFG	Buskin River Sockeye Salmon Weir	\$25.9	\$22.5
07-404	USFWS	Perryville-Clark River Coho-Sockeye Aerial Counts		
07-405	USFWS	McLees Lake Sockeye Salmon Weir	\$10.8	\$36.5
07-408	USFWS	Togiak River Rainbow Smelt Assessment	\$9.9	
Harvest Monitoring and Traditional Ecological Knowledge Projects				
07-452	ADFG	Kvichak Watershed Subsistence Fishing Ethnography		
07-455	EDAW	Adak Island Subsistence Fishing	\$10.1	\$25.0

## **PRIORITIES FOR FUNDING**

After reviewing the seven investigation plans, the Technical Review Committee prioritized projects in the following descending order.

07-402	Buskin River Sockeye Salmon Weirs	\$ 99,200
07-404	Perryville-Clark River Coho-Sockeye Aerial Counts	\$ 0
07-401	Afognak Lake Sockeye Assessment	\$ 76,726
07-405	McLees Lake Sockeye Weir	\$ 79,964
07-452	Kvichak Watershed Subsistence Fishing Ethnography	\$ 146,119
07-408	Togiak River Rainbow Smelt Assessment	\$ 78,141
07-455	Adak Island Subsistence Fishing	\$ 90,300

Brief descriptions of each project follow (see Executive Summaries for more details):

- **Buskin River Sockeye Salmon Weirs.** This project would provide three annual estimates of sockeye salmon spawning escapement into the Buskin River through operation of two weirs, and obtain information on residency and traditional fishing sites of subsistence fishery participants. This study would continue work funded through the Fisheries Resource Monitoring Program since 2000 in response to the State's inability to continue funding weir operations.
- **Perryville and Clark River Coho-Sockeye Aerial Counts.** This project would monitor coho salmon runs in the Kametlook and adjacent drainages as well as the late-run sockeye salmon run into Clark River, a tributary to Chignik Lake, using two annual aerial surveys conducted from a helicopter. This study would continue the annual monitoring surveys funded through the Monitoring Program since 2003 in response to subsistence closures on the Kametlook River and reports of difficulty in harvesting late-run Clark River sockeye salmon for subsistence uses.
- **McLees Lake Sockeye Weir.** This project would provide three annual estimates of sockeye salmon spawning escapement into McLees Lake through operation of a weir. This study would continue work funded through the Monitoring Program since 2001 in response to the State's inability to continue funding weir operations.
- **Afognak Lake Sockeye Assessment.** This project would provide three annual estimates of actual sockeye salmon smolt production from Afognak Lake as well as annual assessments of juvenile/smolt production capacity of Afognak Lake. This study would continue work funded through the Monitoring Program since 2003 in response to a run decline that began in 2001 and subsequent subsistence fishing restrictions that occurred during the 2002–2004 seasons.
- **Kvichak Watershed Subsistence Fishing Ethnography.** This project would provide a rich ethnographic description of subsistence sockeye salmon fisheries of Nondalton, Newhalen, Iliamna, and Port Alsworth, and describe changing subsistence salmon fishing strategies and patterns that have developed over the last 20 to 25 years.
- **Togiak River Rainbow Smelt Assessment.** This project would provide basic life history information on Togiak River rainbow smelt, including spawning locations, run-timing, and age, sex, and length composition of both the run and subsistence harvest. Rainbow smelt are an important component of the subsistence harvests of Togiak, Twin Hills, and Manakotak, yet little is known about this species.

- **Adak Island Subsistence Fishing.** The goal of this study is to characterize the cultural context of contemporary subsistence fishing and analyze whether conservation management strategies are needed to ensure the protection of subsistence fishing in Adak. Project objectives are to: 1) identify the role subsistence fishing plays in Federal conservation waters today; 2) document subsistence fishing locations identified as being important; 3) better understand the importance these areas will have in the future; and 4) capture relevant traditional ecological knowledge that has been passed down to current users, as well as relevant forms of knowledge that may have evolved since the reestablishment of the civilian community. A majority of the Technical Review Committee had concerns over the applicability of the information to Federal subsistence management because of the area's nonrural status. However, Adak is currently under consideration for a change of status to rural and one member of the committee felt that the project would provide important information to address potential regulatory proposals stemming from this change in status.

## RECOMMENDATIONS FOR FUNDING

The Technical Review Committee recommended funding six of the seven projects under consideration in the Southwest Region. Available funding for the region only allows for funding five of the seven projects. However, after recommendations had been developed for all regions, some funds still remained unallocated. The committee examined the list of projects they had not initially recommended for funding during regional reviews to determine whether any were of great enough strategic importance and scientific merit to fund from remaining unallocated monies. For the Southwest Region the Technical Review Committee recommended that the *Togiak River Rainbow Smelt Assessment* project, also be funded to fill an information gap for an important subsistence species. The six Southwest Region projects recommended for funding by the committee comprise a strong Monitoring Plan for that region by addressing strategically important information needs based on sound science and by promoting cooperative partnerships (Table 4).

**Table 4.** Funding recommendations by the Technical Review Committee (TRC) for Southwest Region projects, 2007 Fisheries Resource Monitoring Program.

Project Number	Title	TRC	Requested Budget (\$000s)		
			2007	2008	2009
Stock Status and Trends Projects					
07-401	Afognak Lake Sockeye Salmon Smolt & Lake Assessment	Yes	\$76.7	\$76.7	\$81.0
07-402	Buskin River Sockeye Salmon Weir	Yes	\$99.2	\$78.1	\$79.2
07-404	Perryville-Clark River Coho-Sockeye Aerial Counts	Yes	\$0.0	\$31.0	\$31.0
07-405	McLees Lake Sockeye Salmon Weir	Yes	\$80.0	\$75.9	\$78.0
07-408	Togiak River Rainbow Smelt Assessment	Yes	\$78.1	\$78.4	\$31.8
Harvest Monitoring and Traditional Ecological Knowledge Projects					
07-452	Kvichak Watershed Subsistence Fishing Ethnography	Yes	\$146.1	\$111.8	\$42.3
07-455	Adak Island Subsistence Fishing	No	\$90.3	\$50.2	\$0.0
Total			\$570.4	\$502.1	\$343.3
Funding Guideline			\$403.0		
TRC Recommendation			\$480.1	\$451.9	\$343.3

## EXECUTIVE SUMMARIES

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**Project Number:** 07-401  
**Project Title:** Stock Assessment and Restoration of the Afognak Lake Sockeye Salmon Run  
**Geographic Region:** Southwest  
**Data Type:** Stock Status and Trends  
**Principal Investigator:** Steven Honnold, ADFG Division of Commercial Fisheries  
**Co-Investigator(s):** Stephen Schrof and Robert Baer, ADFG Division of Commercial Fisheries

**Cost:** **2007:** \$76,726                      **2008:** \$76,726                      **2009:** \$81,039

### RECOMMENDATION: Fund

#### ISSUE

The investigators will continue to assess sockeye salmon production at Afognak Lake in response to the declining adult runs that began in 2001 and have continued through 2005. In response to the declining runs from 2001 to 2004, State and Federal managers closed subsistence fishing in early June during the 2002 season, and in-season closures have occurred each year through 2005 in an attempt to achieve the escapement goals for sockeye salmon into Afognak Lake. This project will continue investigations started in 2003 that were intended to develop possible strategies for increasing future sockeye salmon production for the subsistence fishery in Afognak Bay. Moreover, the Kodiak/Aleutians Subsistence Regional Advisory Council has determined the Afognak Lake sockeye assessment and monitoring project to be one of their highest priority issue and information needs.

#### OBJECTIVES

1. Estimate the number, age, and average size at age of sockeye salmon smolt emigrating from Afognak Lake from 2007–2009.
2. Evaluate the water chemistry, nutrient status, and plankton production of Afognak Lake from 2007–2009.
3. Assess the rearing conditions for juvenile sockeye salmon in Afognak Lake based upon completion of objectives 1 and 2.

#### Methods

A smolt trap will be installed in the Afognak River to capture a portion of the sockeye salmon smolt outmigration from Afognak Lake. Trap efficiency will be determined using mark-recapture techniques in order to estimate the total sockeye salmon smolt outmigration from Afognak Lake. Associated trapping, handling, and marking mortality will be determined.

The ADFG field crew will collect age, weight, and length data from 40 sockeye salmon smolt per day for five consecutive days per week. These data will be used to estimate the age composition and average length,



weight and condition factor by age of the Afognak Lake sockeye salmon smolt outmigration. ADFG staff will also collect limnology information from Afognak Lake, including water chemistry, nutrient, phytoplankton, zooplankton, temperature, dissolved oxygen, and light penetration data. Lake samples will be analyzed in Kodiak at the ADFG limnology laboratory. Investigators will use the smolt information along with limnology and other freshwater data to assess the carrying capacity for juvenile sockeye salmon in Afognak Lake.

## **PARTNERSHIPS/CAPACITY BUILDING**

ADFG biologists are currently working with administrators in the Kodiak Island Borough School District's Rural Schools Office to educate students on the Afognak Lake sockeye salmon project and its importance to the subsistence users. ADFG biologists will travel to the Villages of Port Lions and Ouzinkie, and local Kodiak area schools for a visual presentation of the project. Contact with the Native Village of Afognak, Inc. is underway to foster a relationship for planning future trips to the project site for village members and discuss the work being done at the Afognak Lake system in an attempt to increase sockeye salmon production to Afognak Lake for subsistence purposes.

The ADFG will give preference to locals, including qualified residents of the Villages of Port Lions and Ouzinkie, when hiring sampling crews. If appropriate, internships will be developed through the University of Alaska to provide career-track positions. Local employees will be trained in various biological data collection techniques and will be educated in many research applications that assist with salmon management.

## **JUSTIFICATION**

This project is of high strategic importance for the Kodiak Management Area, is technically sound, is a continuation of work successfully conducted since 2003, and has a reasonable schedule and budget for the proposed work. The investigators have a proven record of successfully conducting, administering, and completing other Fisheries Resource Monitoring Program projects. While capacity building would have been adequate as described in the original proposal, hiring local research assistants and developing the student internship for local residents represents a substantial improvement. The investigators have incorporated Technical Review Committee proposal recommendations concerning strengthening of capacity building and information sharing into the investigation plan.

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**Project Number:** 07-402  
**Project Title:** Buskin River Sockeye Salmon Stock Assessment and Monitoring,  
Kodiak, Alaska  
**Geographic Region:** Southwest  
**Data Type:** Stock Status and Trends  
**Principal Investigator:** Donn Tracy, ADFG Division of Sport Fish

**Cost:** **2007:** \$99,200                      **2008:** \$78,100                      **2009:** \$79,200

**RECOMMENDATION:**                      **Fund**

**ISSUE**

Investigators will annually enumerate escapement and sample age composition of sockeye salmon into the Buskin River drainage for inseason management of subsistence and other fisheries and development of a biological escapement goal. Investigators will also interview subsistence fishers to determine demographics of participants and use of harvested fish, and previous and potential future participation in subsistence fisheries in the area.

**OBJECTIVES**

1. Census the sockeye salmon escapement into Buskin and Louise Lakes from June 1 through August 15.
2. Estimate the age composition of the combined subsistence harvest in the Buskin River Section of Chiniak Bay and sockeye salmon escapement into Buskin Lake from June 1 to August 15 such that the estimates are within 5 percentage points of the true value 95% of the time.
3. Estimate the age composition of the sockeye salmon run to Louise Lake from June 1 to August 15 such that the estimates are within 7.5 percentage points of the true value 95% of the time.
4. Evaluate the sockeye salmon biological escapement goal.
5. Census the residence of subsistence fishery participants.
6. Estimate the distribution of use of subsistence-harvested fish, and the historic and potential future use of the Buskin River subsistence fishery such that all estimates are within 8 percentage points of the true values 95% of the time.

**METHODS**

Investigators will install a salmon counting weir on the Buskin River and Lake Louise tributary to annually census the spawning escapement of sockeye salmon. Additionally, sockeye salmon will be sampled at the weirs and from the subsistence harvest for age, sex and length, providing estimates of the combined escapement and subsistence harvest by age within 25% of the true values 95% of the time. Analyses of the return and age data will be incorporated into a brood table. Past estimates of total return, using sample sizes similar to those proposed here have been associated with a relative precision of about 12%. Collection of return and age data at this level of sampling will improve information in the brood

table and, subsequently, evaluation of the biological escapement goal. Participants in the fishery will be surveyed to estimate the residency and fish stock(s) traditionally harvested by fishery participants.

## **PARTNERSHIPS/CAPACITY BUILDING**

The investigators promote local hire of federally qualified subsistence users as project technicians. During each year of funding the investigators will continue a student intern program established in 2003 to provide education and career development opportunity for subsistence users. Through cooperation with the Kodiak National Wildlife Refuge (KNWR) the investigators have utilized the Buskin River weir as an educational tool for the KNWR Summer Science and Salmon Camp program.

## **JUSTIFICATION**

This project addresses priority information needs for the Kodiak Management Area, is technically sound, is a continuation of work successfully conducted since 2000, and has both a reasonable schedule and budget for the proposed work. The investigators have a proven record of successfully conducting, administering, and completing other Fisheries Resource Monitoring Program projects. The investigators were responsive to recommendations made by the Technical Review Committee during their review of the initial proposal, and were generally successful in addressing these within the investigation plan. Further clarification is needed within the Methods section concerning the reasoning behind the investigators' decision to interview 150 subsistence fishers during the season and why this would result in estimates of "the distribution of use of subsistence-harvested fish, and the historic and potential future use of the Buskin River subsistence fishery...that...are within 8 percentage points of the true values 95% of the time." Finally, minor discrepancies in subsistence harvest numbers for 2002 and 2003 reported in the investigation plan should be resolved with harvest numbers for these years included in the 2004 annual report for project 04-414.

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**Project Number:** 07-404  
**Project Title:** Estimation of Coho Salmon Escapement in Streams Adjacent to Perryville and Sockeye Salmon Escapement in Clark River, Alaska Peninsula National Wildlife Refuge  
**Geographic Region:** Southwest  
**Data Type:** Stock Status and Trends  
**Principal Investigator:** Jim Larson, USFWS, King Salmon Fish and Wildlife Field Office

**Cost:** 2007: \$0                      2008: \$31,000                      2009: \$31,000

**RECOMMENDATION:**                      **Fund**

**ISSUE**

Conservation and subsistence concerns still exist for coho salmon stocks in the Kametolook drainage, and subsistence effort has expanded to adjacent drainages. During Regional Advisory Council meetings and at the Perryville Subsistence Working Group meetings, local residents stated that they were now taking coho salmon from other streams outside the immediate vicinity of Perryville. In many ways, these streams are similar to streams near Perryville in that they are short, high gradient streams with limited coho salmon abundance. In order to prevent over harvest of these small coho salmon stocks, escapement and harvest levels need to be monitored.

Sockeye salmon in the Chignik watershed are an important species for commercial and subsistence harvest. Subsistence fishers from the Chignik Villages target late run sockeye salmon. In recent years, subsistence fishers in the Chignik area have had difficulty harvesting enough late run fish and are concerned that this run has declined and may be over-exploited by the commercial fishery. We need to monitor sockeye salmon escapement in the Chignik watershed to ensure escapement is maintained to meet subsistence needs for residents of the Chignik villages.

The King Salmon Fish and Wildlife Field Office proposes to continue monitoring adult coho salmon returns in streams near Perryville, and to continue monitoring late run sockeye salmon returns to Clark River, a tributary to Chignik Lake. The run timing of these stocks is similar and lend themselves to concurrent monitoring. This project addresses Priority Need #1 for the Chignik Unit identified for the 2007 Fisheries Resource Monitoring Program by providing escapement information for late-run sockeye salmon in the Clark River, and addresses Priority Need #2 for the Chignik Salmon Unit by providing coho salmon escapement information for systems draining into Ivanof, Humpback, Anchor, and Ivan bays. Continuation of this project will increase baseline escapement data and provide a better understanding of run timing and adult production in these systems.

**OBJECTIVES**

1. Estimate minimum numbers of coho salmon returning to streams near the village of Perryville.
2. Estimate minimum numbers of late run sockeye salmon returning to the Clark River, a tributary to Chignik Lake.

## **METHODS**

Two aerial surveys will be conducted annually (one in late September/early October, and one in mid to late October) using low-level helicopter flights. An observer will fly all of the chosen stream reaches in the study area (streams in Ivanof, Humpback, Anchor, and Ivan bays, and the Clark River) and count coho and sockeye salmon from a low-flying helicopter. We will coordinate our flights to avoid periods of turbid flow to minimize counting error. Our assumption is that aerial counts will provide a minimum estimate of escapement. We will not expand the counts.

## **PARTNERSHIPS/CAPACITY BUILDING**

The project has developed partnerships between the villages of Perryville and Chignik and the King Salmon Fish and Wildlife Field Office through meetings that utilized the local knowledge to identify streams for monitoring. The local citizens have the knowledge of where fishing pressure has shifted with the closure of the local rivers, and thus where monitoring is necessary to ensure escapement needs are met. In-season communication with the local residents is also conducted to determine if salmon escapement is sufficient to satisfy subsistence needs in the survey area, and to coordinate survey timing.

## **JUSTIFICATION**

This project is of high strategic importance for the Chignik Management Area, is a continuation of work successfully conducted since 2003, and has both a reasonable schedule and budget for the proposed work. The investigator has a proven record of successfully conducting, administering, and completing other Fisheries Resource Monitoring Program projects. While it would be preferable to have quantifiable objectives to monitor these runs, it would not be feasible or cost-effective to modify this project to accomplish this due to frequent storms, high water events, and the difficulty to access most of these streams.

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**Project Number:** 07-405  
**Project Title:** Estimation of Sockeye Salmon Escapement into McLees Lake, Unalaska Island  
**Geographic Region:** Southwest  
**Data Type:** Stock Status and Trends  
**Principal Investigator:** Jim Larson, USFWS King Salmon Fish and Wildlife Field Office  
**Co-Investigator(s):** Sharon Livingston, Qawalangin Tribe  
Forest Bowers and Matt Foster, ADFG Division of Commercial Fisheries

**Cost:** **2007:** \$79,964                      **2008:** \$75,929                      **2009:** \$77,961

**RECOMMENDATION:**                      **Fund**

**ISSUE**

The King Salmon Fish and Wildlife Field Office is seeking to continue monitoring the sockeye salmon escapement into McLees Lake for an additional three years. Sockeye salmon returns to McLees Lake have varied greatly over the past five years ranging from 12,097 in 2005 to 101,793 in 2002. Continuation of this project will increase the baseline escapement data and provide a better understanding of system productivity. A better understanding of productivity is necessary to manage the subsistence fishery and know the level of exploitation on this stock. If annual production results in run sizes around the 2005 escapement, there is the potential for this stock to be highly exploited. However, if the 2002 and 2003 escapements are typical, then concerns of high exploitation are not warranted at the current harvest level. At this time we do not have a clear pattern of escapement into McLees Lake. Without this information the management of the subsistence fishery will be conservative. Conservative management could limit subsistence fishing opportunities unnecessarily. If the need for an escapement goal arises in the future, the continued monitoring we propose will provide information necessary for the development of an escapement goal for this system. Managers need a better understanding of McLees Lake sockeye salmon production to maximize subsistence opportunities while protecting the health of the population. Additionally, continuation of this project will provide information needed to determine the effects the large escapements of 2002 (97,780) and 2003 (101,793) had on the dynamics of this stock. The sockeye salmon run is important to local subsistence users in Unalaska.

**OBJECTIVES**

1. Enumerate the daily passage of sockeye salmon through the weir;
2. Describe the run-timing, or proportional daily passage, of sockeye salmon through the weir;
3. Estimate the sex and age composition of sockeye salmon such that simultaneous 90% confidence intervals have a maximum width of 0.20; and
4. Estimate the mean length of sockeye salmon by sex and age.



## **METHODS**

The U.S. Fish and Wildlife Service will install and operate a flexible picket weir at the outlet of McLees Lake. The weir will be operated from approximately May 30 to August 15 during each year of the project. A trap and holding area will be located on the upstream side of the weir to facilitate sampling and passing adult salmon through the weir. Fish will be passed and counted intermittently between 0800 and 2300 hours each day. All fish passing upstream will be identified to species and enumerated. Data on sockeye salmon age, sex, and length will be collected weekly. Sampling will consist of measuring length, determining sex, collecting scales, and then releasing the fish upstream of the weir.

## **PARTNERSHIP/CAPACITY BUILDING**

This project will assist in developing partnerships between the U.S. Fish and Wildlife Service, the Qawalangin Tribe of Unalaska, and the Alaska Department of Fish and Game. Capacity building will occur with the Qawalangin Tribe by their direct participation in the collection of escapement data that will be used to develop management strategies for the Reese Bay subsistence fishery. The King Salmon Fish and Wildlife Field Office crew leader will act as a mentor with the purpose of training the local technicians to become crew leaders for future weir operations. Local technicians will be trained in the installation and operation of a fish weir, biological sampling procedures, and data collection and verification methods. In conjunction with the University of Alaska Fairbanks Marine Advisory Program representative, annual project presentations will be given to the community of Unalaska.

## **JUSTIFICATION**

This project is of high strategic importance for the Aleutian Islands Management Area, is technically sound, is a continuation of work successfully conducted since 2001, and has both a reasonable schedule and budget for the proposed work. The Principal Investigator has a proven record of successfully conducting, administering, and completing other Fisheries Resource Monitoring Program projects. The investigators addressed Technical Committee proposal review comments by including information on variance estimates for mean length in the Methods section for Objective 4 and omitting Objective 5 concerning escapement goal development. The investigators also need to include information in the Methods section on their intention to report standard errors and ranges of mean lengths, by age and sex, as they have done for projects 01-059 and 04-403.

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**Project Number:** 07-408  
**Project Title:** Stock Assessment of Rainbow Smelt in the Togiak River  
**Geographic Region:** Southwest  
**Data Type:** Stock Status and Trends  
**Principal Investigator:** Jim Larson, USFWS King Salmon Fish and Wildlife Field Office  
**Co-Investigator(s):** Robbin LaVine, Bristol Bay Native Association  
Pat Walsh, USFWS Togiak National Wildlife Refuge

**Cost:** **2007:** \$78,141                      **2008:** \$78,352                      **2009:** \$31,827

**RECOMMENDATION:**                      **Fund**

**ISSUE**

Rainbow smelt are among the most harvested non-salmon fish by subsistence users in the villages of Togiak and Twin Hills. The only information on smelt in southwest Alaska is the documented subsistence harvest surveys conducted by ADFG and Bristol Bay Native Association. Conservation managers need basic life history data such as sex and age composition, in addition to harvest information, to maximize subsistence opportunities while continuing to protect the health of the population. This project would be the first steps in furthering our understanding of the life history of an important subsistence species. This project addresses two of the six priority information needs for the Bristol Bay-Chignik non-salmon group.

**OBJECTIVES**

1. Estimate age and sex composition of spring spawning populations of rainbow smelt in the Togiak River such that simultaneous 90% confidence intervals have a maximum width of 0.20.
2. Estimate age and sex composition of rainbow smelt harvested by the winter subsistence fishery in the Togiak River such that simultaneous 90% confidence intervals have a maximum width of 0.20.
3. Estimate mean length of rainbow smelt in the Togiak River by sex, age, and time of year.
4. Describe the maturation rate from November to June.
5. Identify spawning locations and timing of rainbow smelt in the Togiak River.
6. Conduct larval assessment as index of relative run strength.

**METHODS**

A two-year sampling regime will begin in 2007 with winter sampling during the subsistence harvest season followed by spring sampling from mid-May through June 2008. Rainbow smelt will be harvested during the winter subsistence fishery and analyzed for age, length, sex, food habits, and maturity. Locations for sampling will be determined by accessing local knowledge of customary fishing areas; time and dates to fish will be scheduled to match as closely as possible the schedule used by the subsistence fishers. Fish will be frozen and shipped to the King Salmon Fish and Wildlife Field Office for processing.

Beginning in May, a three person crew will access the lower Togiak River by boat, sampling for spawning locations, egg and larvae collection, run timing, and population characteristics. Sampling will be conducted using a long-handled dip net, a variable-mesh monofilament gill net and a seine net. Sampling locations include a gravel bar located about 200 m upstream from the mouth of the Togiak River as well as other spawning areas correlated with the gull activity and other surface disturbances associated with spawning activity. We will examine each location with a small under-water video camera and sample the substrate directly below. This sampling regime will allow for comparison between fish targeted by the subsistence fishery in the winter and fish found in the river during the spring spawning run.

Spawning productivity estimates based on in-river, egg and larval density measurements will be used to develop an index of larval smelt abundance that will be used to monitor the long-term population trends of the Togiak rainbow smelt. Variation in vulnerability and catchability of adults can be a problem with other assessment techniques that use seines, trawls, gill nets or traps. Ichthyoplankton catchability, however, is relatively constant, as most targets are small (< 15 mm), and unable to avoid the nets. Fishing skill usually is not a complicating factor in capturing larvae so catchability or sampling variation is minimal. For these reasons, larval samples may provide better unbiased estimates of the population than samples from other gear types. Ichthyoplankton surveys that utilized replicate sampling and bootstrapping techniques derived consistent estimates with relatively tight confidence intervals.

## **PARTNERSHIPS AND CAPACITY BUILDING**

The Bristol Bay-Chignik Area Planning Work Group identified the lack of information on rainbow smelt in the Togiak River as a high priority need (OSM 2005). King Salmon Fish and Wildlife Field Office will provide a crew leader for this project and will conduct the data analysis; Togiak National Wildlife Refuge will conduct the sampling of the winter subsistence fishery; Bristol Bay Native Association will provide technicians to assist in data collection. This project will assist in developing partnerships between the U.S. Fish and Wildlife Service, the Native Village of Togiak, and the Bristol Bay Native Association. Capacity building will occur with the Native Village of Togiak by their direct participation in the collection of life history data that will be used to develop management strategies for the Togiak River subsistence fishery. The King Salmon Fish and Wildlife Field Office crew leader will act as a mentor with the purpose of training the local technicians to become crew leaders for future fishery data-collection operations. Local technicians will be trained in the use of collection gear, boating, biological sampling procedures, and data collection and verification methods. In this manner, local community members will develop a greater sense of ownership of conservation programs, with the intent that technicians will return as crew leaders, and these crew leaders will later attend post-secondary and graduate schools to develop the professional skills needed to take charge of conservation research. In conjunction with the Togiak National Wildlife Refuge representative, annual project presentations will be given to the community of Togiak.

## **JUSTIFICATION**

This proposal would address information needs of strategic importance for non-salmon fisheries within the Bristol Bay Management Area. While the Non-Salmon Fisheries Unit was ranked as a lower priority than either of the salmon fisheries units within the strategic plan, rainbow smelt is an important component of the Togiak subsistence harvest and very little information is available on this resource. The investigators successfully addressed all needed modifications contained within the Technical Review Committee's proposal review. The proposal is technically sound, has a reasonable schedule and budget for the proposed work, and investigators have a proven record of successfully conducting, administering, and completing other Fisheries Resource Monitoring Program projects.

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**Project Number:** 07-452  
**Project Title:** The Kvichak Watershed Subsistence Fishery: An Ethnographic Study  
**Geographic Region:** Southwest  
**Data Type:** Harvest Monitoring/Traditional Ecological Knowledge  
**Principal Investigator:** James Fall, ADFG, Division of Commercial Fisheries  
**Co-Investigator(s):** Davin Holen, ADFG, Division of Subsistence  
Robbin La Vine, Bristol Bay Native Association Natural Resource Department  
Theodore Krieg, ADFG, Division of Subsistence  
Michelle Ravenmoon and Karen Gaul, NPS Lake Clark National Park and Preserve

**Cost: 2007:** \$146,119      **2008:** \$111,814      **2009:** \$43,320

**RECOMMENDATION:**      **Fund with modification**

## **ISSUE**

This ethnographic study will investigate how families in four communities of the Kvichak District of the Bristol Bay Management Area (Iliamna, Newhalen, Nondalton, and Port Alsworth) develop subsistence fishing strategies in response to changing sociocultural, economic, and environmental circumstances. Such ethnographic information about community patterns of subsistence use and adaptation is lacking, but is essential for the effective management of fisheries to provide for subsistence uses. Subsistence sockeye salmon harvests in the Kvichak District have declined since the early 1990s. Poor sockeye salmon returns are likely one factor responsible for declining harvests, but socioeconomic and sociocultural factors may be partly responsible as well. Further, the current household permit system may inadequately document participation, harvest levels, and harvest timing for at least some very active multi-household extended families, creating difficulties for tracking harvest trends. The three research questions are: (1) how do families make decisions about subsistence fishing in light of ever-changing sociocultural, economic, and environmental circumstances; (2) what factors shape annual variations in subsistence harvests of Kvichak fish, and (3) which of these factors shape long-term trends in the fishery. The study will use a combination of research methods organized in stages to build upon findings as the study progresses. The results will be directly useful for fisheries managers for interpreting changing subsistence harvest levels and participation rates for salmon and for nonsalmon fish and in providing more precise harvest data. Portions of this management area are within the Lake Clark National Park and Preserve; the proposed study communities are Resident Zone Communities of the park.

## **OBJECTIVES**

1. Prepare an ethnographic description of the subsistence sockeye salmon fisheries of the communities of Nondalton, Newhalen, Iliamna, and Port Alsworth in 2007 regarding: the social organization of harvesting, processing, and distributing the catch; the location of harvests, including use of fish camps; gear types; and processing methods.

2. Estimate the subsistence sockeye salmon harvests, including harvests by location, date, and social group for Nondalton, Iliamna, Newhalen, and Port Alsworth in 2007.
3. Document the social context of subsistence fishing for salmon and other fish for four case study families over the course of one year as examples of community use patterns (2007/2008).
4. Describe the decision-making process of the four case study families in annual subsistence harvests of salmon and other fish, including adjustments made in response to resource abundance, the species selection process, and the selection of family members for harvesting.
5. Identify the social, cultural, economic and environmental factors that shaped subsistence salmon harvesting activities in Nondalton, Iliamna, Newhalen, and Port Alsworth in 2007.
6. Describe changing subsistence fishing strategies and patterns in the subsistence salmon fishery that have developed in the study communities over the last 20 to 25 years.

## METHODS

(1) *A literature review* will identify trends in the Kvichak sockeye run and the subsistence fishery and help frame questions for key respondents and topics for the ethnographic fieldwork. (2) *Ethnographic fieldwork* during subsistence sockeye salmon fishing in the summer and fall of 2007 will address Objectives 2, 3, 5, and 6. The goal will be to describe the decision-making processes involved in subsistence fishing and organization of subsistence salmon harvesting. (3) *Family case studies* address Objectives 3, 4, 5, and 6. Documentation of subsistence activities and harvests of four families will take place over the course of a year (2007/2008) using logbooks, journals, photographs, and interviews. (4) *Key respondent interviews and oral histories* will contribute to meeting Objectives 1 and 2. About 20 interviews will record the history of fish camps, describe organizational principles of the subsistence fishery, and assess trends in the salmon run and subsistence fishing methods and harvests as informed by traditional knowledge. (5) *Systematic household harvest surveys* with about 20 to 30 households will address objective 2 and supplement 2007 harvest data from permits to help evaluate harvest data in light of observations about the social organization of fishing from the ethnographic fieldwork, family case studies, and key respondent interviews.

## PARTNERSHIP/CAPACITY BUILDING

The project will be a collaboration between ADFG, NPS, and BBNA. NPS and BBNA local resident interns and other local resident research assistants will be trained to assist with literature review, ethnographic fieldwork, key respondent interviews, and harvest surveys. Case study families will be trained in data gathering methods and compensated for their involvement.

## JUSTIFICATION

The Technical Review Committee recommends funding this proposal with modifications. The project addresses several high priority issues identified in the 2007 Request for Proposals, and is a strong collaborative effort. However, this is a highly ambitious and complex project, and while the data collection methods are technically sound, the various components are not well integrated into a cohesive project plan. Further, analysis and synthesis of the data are not well developed and investigator responsibilities and time commitments are not clearly delineated.

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**Project Number:** 07-455  
**Project Title:** Adak Island Subsistence Fishing in a Changing Regulatory Environment  
**Geographic Region:** Southwest  
**Data Type:** Harvest Monitoring/Traditional Ecological Knowledge  
**Principal Investigator:** Michael A. Downs, EDAW Inc.  
**Co-Investigator(s):** Barbara Bamberger, EDAW Inc.

**Cost: 2007:** \$90,290                      **2008:** \$50,213                      **2009:** \$0

**RECOMMENDATION:**                      **Do not fund**

## **ISSUE**

Part of what is now the National Wildlife Refuge system since the early 1900s, Adak was the site of subsistence activity on at least a seasonal basis for generations. World War II saw the construction of a large military base and displacement of subsistence activities. Following the base closure with the end of the Cold War, a civilian community has been reestablished on the island. Families of the regional Aleut Corporation shareholders resettled in the community providing an Alaska Native population nexus. It is assumed that subsistence will play a growing role in the community, but this use is not documented. The extent to which contemporary subsistence is influenced by traditional ecological knowledge (TEK) passed down from pre-WWII or military-era occupation of the island is not documented. Recent federal land transfers have changed management boundaries, and no information is available regarding the relative perceived value of subsistence resources occurring in or adjacent to federal and non-federal areas of the island. In Adak, there is the unique opportunity to document evolving subsistence resource use in a place that is both an old and a new community.

## **OBJECTIVES**

1. Establish the importance to residents of subsistence resource use on and adjacent to federal conservation waters on Adak Island.
2. Identify and map key subsistence fishing habitat and specific resource use techniques used in subsistence fishing on and adjacent to the federal waters of Adak island.
3. Document areas currently used or desired to be used by residents (but closed to subsistence fishing). Identify areas of displacement of traditional subsistence activities from subsistence areas. Evaluate the implications for conservation management of these areas.
4. Analyze whether past experience has informed contemporary subsistence practices to determine if a relationship exists between historical and contemporary subsistence fishing on Adak Island.
5. Provide recommendations on future biological studies necessary for analyzing the conservation of subsistence fishing populations, based upon the TEK findings.



## **METHODS**

This study will employ a multi-method approach to TEK which includes a literature review, ethnographic interviews with elders, semi-structured key informant interviews, participatory small-group meetings, and community mapping. The study will translate the data into GIS maps.

## **PARTNERSHIPS/CAPACITY BUILDING**

This study is actively partnering with the Aleut Enterprise Corporation. Capacity building will occur through the hiring, training of local research assistants, and the mentorship of Aleut Enterprise Corporation staff to develop and maintain a traditional knowledge database well after the end of the study. The Adak Island study is proposed to meet Levels 5 and 6 of the “Level of Community and Regional Involvement in Fisheries Resource Monitoring Program Projects” chart. Our study will work cooperatively with the Federal and State subsistence regulatory agencies, the USFWS, and North Pacific Research Board and the North Pacific Fishery Management Council.

## **JUSTIFICATION**

The Technical Review Committee does not recommend funding this project. The investigation plan contains a technically sound approach in an area where little work of this type has occurred, the investigators are highly qualified to do the work and they bring a significant funding match to the project. However, given the absence of Federal subsistence fisheries available to the community at this time, and questions about the applicability of project findings to Federal subsistence fisheries management, the majority of the Technical Review Committee felt that the proposed work is premature at this time. The majority of the committee also believed that a biological assessment would be more appropriate to address management and regulation of Federal subsistence fisheries.

A minority of the Technical Review Committee felt that the proposed project addressed a timely topic that has potential management and regulatory applications. Given the likelihood that Adak will be declared rural, timely funding of this project would provide information necessary to address customary and traditional use determinations, methods and means regulatory proposals, and other analyses to regulate new subsistence fisheries on Adak.